REMARKS

The Examiner has rejected claims 3 to 11 under 35 USC § 112 as being indefinite on the basis that claim 3 recites the limitation "the dispatch of cells or packets". Claim 3 has been amended to replace the objected to wording by "a dispatch of cells or packets". It is believed that this amendment addresses the indefiniteness rejection of claims 3 to 11.

The Examiner has rejected claims 1 to 17 under 35 USC § 102(b) as being anticipated by Sriram (US 5,463,620). Of independent claims 1, 2, 12, 16 and 17, claim 1 has been deleted, claims 2, 16 and 17 have been amended and claim 12 retained as filed. It is believed that the aforementioned amendment of the independent claims are such as to address the Examiner's 35 USC § 102(b) rejections for the reasons stated below.

In Section 7 of the Office Action, the Examiner has equated the dynamic time slice server (DTS) 48 depicted in figures 5 and 6 of Sriram with the common part sublayer (CPS) adaptation device of the present invention. It is the Examiner's view that the DTS 48 comprises a CPS adaptation device for interfacing between a narrow band network and a broad band network. It should be noted that DTS 48 forms part of an ATM multiplexer 29 which itself comprises part of ATM node 10 (figures 3, 5 and 6, column 4 line, 64 to column 5, line 6). As such, it operates purely as an ATM multiplexer receiving ATM cells from a number of sources and multiplexing these to

a single output (column 3, lines 34 to 42, column 4, line 67 to column 5, line 3 and column 5, lines 34 to 39). It is indeed the case that each of the ATM cell queues (figure 5, queues 32 to 46) relates to different types of traffic from various sources but this does not alter the fact that the DTS 48 has a plurality of incoming ATM cell streams organized on a time slice basis which are multiplexed onto a single output cell stream. As such, DTS 48 does not comprise a CPS adaptation device as defined by the present invention.

Also in section 7 of the Office Action, the Examiner suggest that, since the DTS 48 defines a predetermined cycle time D during which it visits each of the queuing circuits 32 to 46 in sequence and withdraws a predetermined number of ATM cells from said circuits and transfers the cells onto the output link 28, the DTS 48 is providing scheduling, prioritization and multiplexing of ingress traffic much in the same manner as the CPS adaptation device of the present invention. However, it is clear from the disclosure of Sriram that the DTS 48 acts only as an ATM multiplexer and that any scheduling and prioritization of ingress traffic must occur prior to that traffic being converted into ATM cells and directed to the various ATM cell queues 32 to 46. In fact, the scheduling and prioritization of ingress traffic must occur in the ATM switching fabric 25 of node 10.

It follows from the above that, since DTS 48 is a simple ATM multiplexer, it does not therefore multiplex ingress traffic onto the broad band network independently of the AAL type traffic since it does not seek to switch traffic at any of the AAL 1 to 5 adaptation layers but multiplexes all of such traffic at the ATM cell layer.

The applicants accept the Examiner's assertion that the DTS 48 must be able to work in a reverse mode, i.e. as a demultiplexer. It is also accepted that this must be true of node 10 which must be able to implement the reverse functions of those described in Sriram.

The present invention as now defined by the independent claims requires that the common part sublayer (CPS) adaptation device has an ingress path incorporating a common memory for payload storage to allow multiplexing at both the AAL and ATM layers to be performed but for an egress path, which provides segregation and delineation of incoming data units, to be a flow through path, i.e. not to incorporate a buffer means for storing incoming data units prior to their segregation and delineation (figure 5). In the present invention, ATM cells received on the CPS egress path are segmented and delineated without buffering and forwarded to the server specific convergence sublayer (SSCS) at which point they are buffered. In classic ATM systems, it is normal for both the CPS and SSCS on the egress path to have buffering. This is demonstrated to some degree in the present invention by the fact that both the SSCS and CPS on the ingress path both have buffering means although the buffering means in the SSCS of the ingress path is optional.

The arrangement of placing the primary buffer in the SSCS and having no buffer in the CPS on the egress path provides two advantages. The first is that it reduces the complexity and expense of the buffering means on the egress path by reducing the amount of buffering means required. Secondly, it allows AAL minicells received on

the CPS egress path to be switched as appropriate (and without being delayed by being buffered) to the CPS ingress path where such AAL2 minicells will be buffered since the primary buffer on the ingress path is located in the CPS.

In the case of Sriram, the ATM node 10 will be structured to have in its switching fabric 25 an SSCS and a CPS. Each of these will comprise an ingress path and an egress path for translating narrow band traffic to broad band and vice versa. However, traffic received at node 10 is firstly stored in input buffers 21 and 23, processed by ATM switching fabric 25 and then sent to queues (buffers) 32 to 46. It is clear therefore that buffering occurs at both the input and output sides of node 10. There is no explicit or even implicit teaching in Sriram which suggests that the CPS egress path can operate as a flow though path. It would therefore have to be concluded that the structure of the ATM switches within the network disclosed by Sriram must be of a conventional form and thus have buffer means in the CPS egress path.

The Examiner has suggested that since some of the types of input traffic handled by the network of Sriram include voice and real time services, it is inherent that the egress path must work in a flow though mode to provide those services in real time. This contention misunderstands the nature of ATM cell handling and this is best illustrated by reference to column 5, lines 39 to 46, in which it is explained that the predetermined cycle time period D is selected so that it is no longer than the maximum amount of time delay which is tolerable for the most delay sensitive traffic handled by the node 10. It follows therefore that, while the node 10 can be

employed to provide real time traffic services, the DTS 48, since it operates in a time slice manner, requires that ATM cells be queued both in the ingress and egress path directions and consequently that it be buffered in both directions. It therefore cannot be concluded that the CPS egress path operates on a flow through mode. There is no teaching in Sriram either explicit or implicit to this effect, nor would a skilled person be motivated to consider such a possibility. To do so would require the DTS 48 to work in a flow through manner in its demultiplexing direction, but this is impossibility for a time slice demultiplexing device. Such a possibility can only occur with hindsight and thus while the applicants are of the view that the present invention as now defined by the independent claims is not anticipated by the teaching of Sriram, they are also of the view that it is not rendered obvious by Siram either.

All the points raised by the examiner have now been dealt with, and favorable reconsideration is requested.

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Respectfully submitted,

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Version With Markings To Show Changes Made

2. (Amended) A common part sublayer (CPS) ATM adaptation device, for interfacing between a narrow band network and a broad band network said device being functionally partitioned to provide scheduling, prioritization and multiplexing of ingress traffic to the broadband network independently of the adaptation layer (AAL) type of that traffic, and incorporating ingress and egress paths respectively to and from the broadband network, wherein said egress path provides on a through path segregation and delineation of incoming data units on to respective external data ports, and wherein said ingress path incorporates a common memory for payload storage whereby to perform multiplexing at both AAL and ATM layers.

3. (Amended) A common part sublayer ATM adaptation device as claimed in claim 2, and arranged to schedule [the]a dispatch of cells or packets into an asynchronous network at a substantially constant rate.

5. (Amended) A common part sublayer ATM adaptation device as claimed in claim [4]3, wherein said segregation on to external data ports is determined from a combination of connection identifier, call state and packet type.

14. (Amended) A method as claimed in claim [13]12, wherein said segregation on to external data ports is determined from a combination of connection identifier, call state and packet type.

16. (Amended) A communications network arrangement, comprising a narrow band network, a broadband network, and a common part sublayer (CPS) ATM adaptation device providing an interfacing function therebetween, wherein common part sublayer ATM adaptation device is functionally partitioned to provide scheduling, prioritization and multiplexing of ingress traffic to the broadband network independently of the adaptation layer (AAL) type of that traffic, and incorporates ingress and egress paths respectively to and from the broadband network, wherein said egress path provides on a through path segregation and delineation of incoming data units on to respective external data ports, and wherein said ingress path incorporates a common memory for payload storage whereby to perform multiplexing at both AAL and ATM layers.

17. (Amended) Software in machine readable form for operating a common part sublayer (CPS) ATM adaptation device, for interfacing between a narrow band network and a broad band network, said software being adapted to functionally partition the device so as [to provide scheduling, prioritization and multiplexing of ingress traffic to the broadband network independently of the adaptation layer (AAL) type of that traffic] to provide scheduling, prioritization and multiplexing of ingress traffic to the broadband network independently of the adaptation layer (AAL) type of that traffic, and incorporating ingress and egress paths respectively to and from the

broadband network, wherein said egress path provides on a through path segregation and delineation of incoming data units on to respective external data ports, and wherein said ingress path incorporates a common memory for payload storage whereby to perform multiplexing at both AAL and ATM layers.